

2/5,K/1 (Item 1 from file: 347)  
DIALOG(R)File 347:JAPIO  
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06629011 \*\*Image available\*\*  
**BACKLIGHT** DISPLAY DEVICE AND METHOD

PUB. NO.: 2000-214825 [JP 2000214825 A]  
PUBLISHED: August 04, 2000 (20000804)  
INVENTOR(s): **NAKAMURA TAISUKE**  
APPLICANT(s): NEC CORP  
NEC SAITAMA LTD  
APPL. NO.: 11-012320 [JP 9912320]  
FILED: January 20, 1999 (19990120)  
INTL CLASS: G09G-003/34; G02F-001/133; G09F-009/00; G09G-003/36

**ABSTRACT**

PROBLEM TO BE SOLVED: To provide an RGB **backlight** display device and method for a portable telephone realizing favorable image quality by controlling an electric current flowing in each **LED** constituting the three primary colors for maintaining constant a luminous intensity irrespective of a desired display color.

SOLUTION: A control part 14 individually controls the timing of an output signal and 'Duty' of a rectangular wave generated at PWM part (R) 7, PWM part (G) 8, and PWM part (B) 9, causes each **LED** to emit light, and performs coloring of a desired display color. However, the total average electrical current flowing in an **LED** (RED) 1, an **LED** (GREEN) 2, and an **LED** (BLUE) 3 is maintained constant irrespective of the desired display color, and the intensity of each display color is maintained constant.

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**BACKLIGHT** DISPLAY DEVICE AND METHOD

INVENTOR(s): **NAKAMURA TAISUKE**

**ABSTRACT**

PROBLEM TO BE SOLVED: To provide an RGB **backlight** display device and method for a portable telephone realizing favorable image quality by controlling an electric current flowing in each **LED** constituting the three primary colors for maintaining constant a luminous intensity irrespective of a desired...

...PWM part (R) 7, PWM part (G) 8, and PWM part (B) 9, causes each **LED** to emit light, and performs coloring of a desired display color. However, the total average electrical current flowing in an **LED** (RED) 1, an **LED** (GREEN) 2, and an **LED** (BLUE) 3 is maintained constant irrespective of the desired display color, and the intensity of...

2/5,K/2 (Item 2 from file: 347)  
DIALOG(R)File 347:JAPIO  
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05255860 \*\*Image available\*\*  
LIQUID CRYSTAL IMAGE DISPLAY DEVICE

PUB. NO.: 08-211360 [JP 8211360 A]  
PUBLISHED: August 20, 1996 (19960820)  
INVENTOR(s): **NAKAMURA TSUTOMU**  
APPLICANT(s): N D R KK [000000] (A Japanese Company or Corporation), JP  
(Japan)  
APPL. NO.: 07-043525 [JP 9543525]  
FILED: February 07, 1995 (19950207)  
INTL CLASS: [6] G02F-001/133  
JAPIO CLASS: 29.2 (PRECISION INSTRUMENTS -- Optical Equipment)  
JAPIO KEYWORD: R005 (PIEZOELECTRIC FERROELECTRIC SUBSTANCES); R011 (LIQUID

CRYSTALS); R116 (ELECTRONIC MATERIALS -- Light Emitting  
Diodes , LED )

ABSTRACT

PURPOSE: To provide a liquid crystal image display device capable of obtaining an effect of reducing power consumption(power saving) and prolonging the life of a **back light** by lighting the **back light** for the screen of the liquid crystal image display device installed on various kinds of production facilities and machine tools, etc., only when it is necessary to watch display contents such as the operating condition of the machine, etc.

CONSTITUTION: A human body detecting sensor 5 is installed on the side part of the front surface of the liquid crystal display panel 3 equipped with the **back light** 2 behind a liquid crystal cell 1, and the **back light** 2 is lighted by the sensor 5 through a **back light** lighting control circuit 6 arranged by the side of the image display circuit 4 while the human body comes close to the display device and the human body stands near the display device, and when the human body goes away from the display device, the **back light** is turned off, or dimmed down. And also, the performance distance of the human body detecting sensor 5 is adjusted by a performance distance adjusting VR(voltage regulator) 7.

INVENTOR(s): NAKAMURA TSUTOMU

...JAPIO KEYWORD: Light Emitting Diodes , LED )

ABSTRACT

... obtaining an effect of reducing power consumption(power saving) and prolonging the life of a **back light** by lighting the **back light** for the screen of the liquid crystal image display device installed on various kinds of...

...part of the front surface of the liquid crystal display panel 3 equipped with the **back light** 2 behind a liquid crystal cell 1, and the **back light** 2 is lighted by the sensor 5 through a **back light** lighting control circuit 6 arranged by the side of the image display circuit 4 while

...

... the display device, and when the human body goes away from the display device, the **back light** is turned off, or dimmed down. And also, the performance distance of the human body...

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DIALOG(R) File 348:EUROPEAN PATENTS

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01346684

Method of fabricating compound semiconductor device and apparatus for  
fabricating compound semiconductor device

Verfahren zur Herstellung eines Verbindungshalbleiter-Bauelements und  
Vorrichtung zur Herstellung eines solchen Bauelements

Procede de fabrication d'un dispositif a semi-conducteur compose et  
appareil pour la fabrication d'un tel dispositif

PATENT ASSIGNEE:

SUMITOMO ELECTRIC INDUSTRIES, LTD., (279013), 5-33, Kitahama 4-chome,  
Chuo-ku, Osaka-shi, Osaka 541, (JP), (Applicant designated States: all)

INVENTOR:

Nakamura, Takao , Osaka Works of Sumitomo El.Ind. Ltd, 1-3-1 Shimaya,  
Konohana-ku,Osaka-shi, Osaka, (JP)

LEGAL REPRESENTATIVE:

Grunecker, Kinkeldey, Stockmair & Schwanhausser Anwaltssozietat (100721)  
, Maximilianstrasse 58, 80538 Munchen, (DE)

PATENT (CC, No, Kind, Date): EP 1150360 A2 011031 (Basic)

APPLICATION (CC, No, Date): EP 2001110335 010426;

PRIORITY (CC, No, Date): JP 2000127150 000427; JP 2000367050 001201

DESIGNATED STATES: AT; BE; CH; CY; DE; DK; ES; FI; FR; GB; GR; IE; IT; LI;  
LU; MC; NL; PT; SE; TR

EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI  
INTERNATIONAL PATENT CLASS: H01L-033/00

ABSTRACT EP 1150360 A2

A method of fabricating a compound semiconductor device having an ohmic electrode of a low contact potential and an apparatus for fabricating a compound semiconductor device are obtained. The method comprises a substrate cleaning step including a first cleaning step of heating a compound semiconductor substrate (1) containing a first conductivity type impurity in a temperature range of not more than 250(degree)C for etching its surface with hydrogen chloride and a second cleaning step of performing a radical hydrotreatment on the compound semiconductor substrate etched with hydrogen chloride after the first cleaning step.

ABSTRACT WORD COUNT: 94

NOTE:

Figure number on first page: 4

LEGAL STATUS (Type, Pub Date, Kind, Text):

Application: 011031 A2 Published application without search report

Change: 020306 A2 Inventor information changed: 20020117

LANGUAGE (Publication, Procedural, Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	200144	768
SPEC A	(English)	200144	5890
Total word count - document A			6658
Total word count - document B			0
Total word count - documents A + B			6658

INVENTOR:

Nakamura, Takao ...

...SPECIFICATION present invention relates to a method of fabricating a compound semiconductor device employed for an **LED** ( light emitting diode ) or the like and an apparatus for fabricating a compound semiconductor device, and more particularly, it relates to a method of fabricating a semiconductor device for a ZnSe-based **LED** employed for the **backlight** of a liquid display unit or the like and an apparatus for fabricating a compound...

...of the Prior Art

In order to drive a compound semiconductor device such as an **LED** , it is necessary to form an electrode on a compound semiconductor. For example, an electrode...

...on the back surface of a ZnSe substrate, in order to produce a ZnSe-based **LED** chip. However, such an electrode of ohmic contact cannot be readily formed on the ZnSe...

...be formed also on the aforementioned ZnSe substrate by fusing In.

In a ZnSe-based **LED** prepared by fusing In, however, various inconveniences result from the low melting point of In in solder reflow or transfer molding. When the ZnSe-based **LED** is heated to 200(degree)C to 250(degree)C, for example, ball-up results...

...ohmic contact is not formed, an unnecessarily high voltage must be applied to the overall **LED** , which in turn requires a large number of batteries and cannot be readily applied to the **backlight** for a liquid crystal display screen of a portable telephone or the like. Thus, strongly...on the interface that ohmic contact is not implemented, or voltage applied to the overall **LED** cannot be reduced even if ohmic contact is implemented. According to the aforementioned structure of...

...reducing a contact potential, thereby enabling reduction of the number of batteries necessary for the **backlight** of a liquid crystal display unit for a portable terminal or the like.

The aforementioned...

...carbon and hence ohmic contact is hard to implement or voltage applied to the overall **LED** cannot be reduced even if ohmic contact is implemented. When the compound semiconductor device is used as the **backlight** of a liquid crystal display unit for a portable terminal, therefore, the number of necessary...

...the back surface of the compound semiconductor substrate, for improving the fabrication yield of an **LED** emitting white light, for example, and reducing the fabrication cost.

In the aforementioned method of...C, further, the performance of a portion formed as the active layer etc. of the **LED** is damaged.

In the aforementioned method of fabricating a compound semiconductor device according to the...

...reducing a contact potential, thereby enabling reduction of the number of batteries necessary for the **backlight** of a liquid crystal display unit for a portable terminal or the like. Electric resistance...Fig. 6 illustrates the current-voltage characteristic of a back electrode of a ZnSe-based **LED** according to the present invention;

Fig. 7 illustrates the current-voltage characteristic of a back...

...Fig. 8 illustrates the current-voltage characteristic of a back electrode of a ZnSe-based **LED** according to the present invention;

Fig. 9 illustrates the current-voltage characteristic of a back...

...n+) ZnSe film;

Fig. 10 is a sectional view showing a stage of forming an **LED** epitaxial multilayer film such as an active layer on the surface of an n-type...mounting the substrate 1. Also when preparing an electrode on a device such as an **LED**, the surface of the device is protected with an Au foil member due to this...low interfacial resistance of not more than 0.1 V, can be employed for the **backlight** of a liquid crystal display unit of a portable terminal for contributing to reduction of...

...according to the aforementioned embodiment and Example 1 thereof, except some conditions.

(1) First, an **LED** epitaxial film including an emission active layer etc. was formed on the surface of an...

...substrate shown in Fig. 1.

(2) Then, the n-type ZnSe substrate formed with the **LED** epitaxial film was bonded to a glass substrate with wax 25, as shown in Fig...

...member was inserted between the n-type substrate and the substrate holder, for protecting the **LED** epitaxial film on the surface side and implementing excellent thermal contact.

(6) Then, the aforementioned...Au film was deposited on this Ti film 5 by 50 nm, for obtaining an **LED** similar to that shown in Fig. 1.

(10) When measuring an operating voltage causing light emission in the **LED** fabricated through the aforementioned method, it was possible to obtain white light from the **LED** at a low value of 2.6 V. This is because it was possible to...

...contact potential on the back surface of the n-type ZnSe substrate.

When applying this **LED** to the **backlight** of a liquid crystal display unit of a portable terminal such as a portable telephone...

...in high efficiency with a high yield, to contribute to introduction of a low-priced **LED** having high performance into the market.

Although the present invention has been described and illustrated...

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014144132 \*\*Image available\*\*

WPI Acc No: 2001-628343/200173

Related WPI Acc No: 2000-516382.

XRPX Acc No: N01-468606

**Method of controlling RGB back light display device for a portable electronic device by maintaining sum of currents flowing through light emitters at set current value using current controller**

Patent Assignee: NEC CORP (NIDE )

Inventor: NAKAMURA T

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
GB 2355841	A	20010502	GB 20001316	A	20000120	200173 B
			GB 20011988	A	20010125	

Priority Applications (No Type Date): JP 9912320 A 19990120

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
GB 2355841	A	32		G09G-003/34	Derived from application GB 20001316

Abstract (Basic): GB 2355841 A

**NOVELTY** - An image is displayed on a display device at given brightness. A color of the image displayed on the display device is changed while maintaining the brightness of the image at a set value when the color is changed. The display device has a number of light emitters such as red, green and blue LEDS (1-3) by maintaining a sum of currents flowing through the light emitters at a set current value using a current controller (14).

**DETAILED DESCRIPTION** - An INDEPENDENT CLAIM is included for:

(a) a display device

**USE** - In a back-light display device of a **portable electronic device**.

**ADVANTAGE** - Capable of developing a desired color for display and maintaining intensity of brightness regardless of a displayed color.

**DESCRIPTION OF DRAWING(S)** - The drawing is a circuit diagram of one embodiment of an RGB back light display device for a **portable electronic device** according to the present invention.

red, green and blue LEDS (1-3)

current controller (14)

pp; 32 DwgNo 3/5

Title Terms: METHOD; CONTROL; RGB; BACK; LIGHT; DISPLAY; DEVICE; PORTABLE; ELECTRONIC; DEVICE; MAINTAIN; SUM; CURRENT; FLOW; THROUGH; LIGHT; Emitter ; SET; CURRENT; VALUE; CURRENT; CONTROL

Derwent Class: P85; T04; U14; W05; X26

International Patent Class (Main): G09G-003/34

International Patent Class (Additional): H05B-033/08; H05B-037/02

File Segment: EPI; EngPI

**Method of controlling RGB back light display device for a portable electronic device by maintaining sum of currents flowing through light emitters at set current value using current...**

Inventor: NAKAMURA T

Abstract (Basic):

... In a back-light display device of a **portable electronic device** .

...

...a circuit diagram of one embodiment of an RGB back light display device for a **portable electronic device** according to the present invention

DIALOG(R)File 350:Derwent WPIX  
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013344443 \*\*Image available\*\*

WPI Acc No: 2000-516382/200047

XRPX Acc No: N00-381804

Light emitting display device e.g. for portable telephone with current control, has a number of different colored light emitters

Patent Assignee: NEC CORP (NIDE ); NEC SAITAMA LTD (NIDE )

Inventor: NAKAMURA T

Number of Countries: 003 Number of Patents: 005

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
GB 2346004	A	20000726	GB 20001316	A	20000120	200047	B
JP 2000214825	A	20000804	JP 9912320	A	19990120	200051	
CN 1265506	A	20000906	CN 2000104634	A	20000120	200065	
GB 2346004	B	20011031	GB 20001316	A	20000120	200169	
GB 2355841	B	20011031	GB 20001316	A	20000120	200169	
			GB 20011988	A	20010125		

Priority Applications (No Type Date): JP 9912320 A 19990120

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
GB 2346004	A	40		G09G-003/34	
JP 2000214825	A	12		G09G-003/34	
CN 1265506	A			G09G-003/32	
GB 2346004	B			G09G-003/34	
GB 2355841	B			G09G-003/34	Derived from application GB 20001316

Abstract (Basic): GB 2346004 A

NOVELTY - The display device comprises a number of light emitters (1,2,3,) each of which is a different color. A current controller (14) is used to ensure that the sum of currents flowing through the light emitters is maintained at a constant level.

DETAILED DESCRIPTION - An INDEPENDENT claim is also included for the method of controlling the light.

USE - The light may be used as a back light, or may be part of a portable electronic device e.g. telephone.

ADVANTAGE - The brightness of the image is maintained at a constant level.

DESCRIPTION OF DRAWING(S) - The diagram shows the RGB back light display for a portable telephone.

Light emitters (1,2,3)

Current controller (14)

PP; 40 DwgNo 3/5

Title Terms: LIGHT; EMIT; DISPLAY; DEVICE; PORTABLE; TELEPHONE; CURRENT; CONTROL; NUMBER; LIGHT; Emitter

Derwent Class: P85; U12; U21; U24; W01; W05; X26

International Patent Class (Main): G09G-003/32; G09G-003/34

International Patent Class (Additional): G02F-001/133; G09F-009/00; G09G-003/36; H05B-033/08; H05B-037/02

File Segment: EPI; EngPI

Inventor: NAKAMURA T

Abstract (Basic):

... The light may be used as a back light, or may be part of a portable electronic device e.g. telephone...

4/5,K/3 (Item 3 from file: 350)

DIALOG(R)File 350:Derwent WPIX  
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011485208 \*\*Image available\*\*

WPI Acc No: 1997-463113/199743

XRAM Acc No: C97-147551

XRPX Acc No: N97-385822

**Battery electrode mfr. for portable electronic devices - involves filtering and agitating active coating material for removing aggregate of non-dispersion before applying to collector body surface**

Patent Assignee: MATSUSHITA DENKI SANGYO KK (MATU ); MATSUSHITA ELECTRIC IND CO LTD (MATU )

Inventor: NAKAMURA T ; OHANA Y; TSURUTA K; UEYAMA Y

Number of Countries: 002 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 9213310	A	19970815	JP 96314326	A	19961126	199743 B
US 5916628	A	19990629	US 96756660	A	19961126	199932

Priority Applications (No Type Date): JP 95309126 A 19951128

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
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JP 9213310	A	6	H01M-004/04
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US 5916628	A		B05D-005/12
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Abstract (Basic): JP 9213310 A

The method involves applying an active coating material onto a collector body surface. The coating material is agitated with an agitator (1), which has an impeller (2) before applying to surface. The material is filtered for removing aggregate of the non-dispersion before applying to surface.

ADVANTAGE - Obtains uniform coating property. Improves yield.

Obtains battery with wide discharge characteristics.

Dwg.1/3

Title Terms: BATTERY; ELECTRODE; MANUFACTURE; PORTABLE; ELECTRONIC; DEVICE; FILTER; AGITATE; ACTIVE; COATING; MATERIAL; REMOVE; AGGREGATE; NON; DISPERSE; APPLY; COLLECT; BODY; SURFACE

Derwent Class: L03; P42; X16

International Patent Class (Main): B05D-005/12; H01M-004/04

International Patent Class (Additional): B01D-035/02; B05D-001/12; H01M-004/02; H01M-006/00

File Segment: CPI; EPI; EngPI

**Battery electrode mfr. for portable electronic devices -**

Inventor: NAKAMURA T ...

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